REMARKS

Claims 1-14, 17, 18, and 21-24 are pending, of which claim 1 is an independent method claim and claim 21 is an independent computer program product claim corresponding to claim 1. Claim 11 has been amended to address a grammatical error.

The Office Action rejected independent claims 1 and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,615,340 to Dai et al. (*Dai*) in view of U.S. Patent No. 6,480,488 to Huang (*Huang*) and further in view of U.S. Patent No. 5,809,252 to Beighe et al. (*Beighe*). The remaining claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Dai*, *Huang*, and *Beighe* in view of U.S. Patent No. 5,724,356 to Parameswaran Nair et al. (*Nair*).[1]

Applicants' invention, as claimed for example in independent method claim 1, is directed to automatically registering a new communication device with a cable modem, and in such a way as to enable delivery of incoming data packets over a cable network to the communication device only when the incoming data packets include destination addresses that are associated with the registered communication device. The recited method includes various acts that are performed by the cable modem, including an act of receiving an outgoing data packet from the communication device having an address that identifies the device. The cable modem then compares the device address with a list of addresses. If the address is not on the list, it is added, such that the communication device is automatically registered with the cable modem.

Similarly, when an incoming data packet is received from the cable network, the destination address of the incoming data packet is also compared to list of addresses. When the destination address matches an address on the list, the data packet is allowed to pass to the corresponding destination device. However, contrary to what happens with the outgoing packets, if the destination address is not on the list, then the incoming packet is filtered and prevented from being passed through the cable modem to the destination device.

Dai discloses a network interfacing apparatus (e.g., a bridge). See col. 1, ll. 49. When an incoming packet is received, the packet's destination address is compared to addresses stored in a source address table, and if found, a controller broadcasts the packet to the working ports of the

[1]Applicants reserve the right to challenge *Dai*, *Huang*, *Beighe*, and *Nair* as a proper prior art references. Accordingly, any statement in this response with respect to *Dai*, *Huang*, *Beighe*, and *Nair* is made merely assuming *arguendo* that these references represent prior art and should not be interpreted as acquiescing their asserted prior art status or teachings.

apparatus. Col. 4, ll. 16-29. If no matching address is found in the source address table, the controller prevents the packet from being sent to the working ports to avoid unnecessary signal traffic for the working ports. Col. 4, ll. 29-34. Similarly, when an outgoing packet is received, the packet's outgoing address is compared to the source address table, and if found, the controller knows that the packet is destined for one of the working ports and allows the packet to be repeated on the working ports, rather than the network, thereby preventing unnecessary network traffic. Col. 4, ll. 35-52. If the outgoing address does not match any of the address in the source address table, it means that the outgoing information packet is destined for an external node (i.e., a node on the network), and the controller sends the packet to the network via an attachment port. Col. 4, ll. 52-58. Both the incoming packet controller 38 and the outgoing packet controller 42 share a single source address table 40. Col. 4, ll. 5-59; Figure 1

Huang discloses sorting and transmitting data packets over a switched fabric using a port controller that includes a router. Col. 3, ll. 57-62; col. 1, ll. 62-67; col. 2, ll. 10-14; col. 4, ll. 16-20; Figures 3 & 5. For received packets (destination address, source address and data), the router compares the packet's destination address with addresses stored in an address table, and if the destination address can be found, a port number corresponding to the destination address is retrieved. Col. 4, ll. 20-25. The router transmits the packet to the switched fabric, which decodes the destination port number to get a destination channel and then transmits the packet from the destination channel to a specific port of a specific port controller. Col. 4, ll. 25-32. If the data is a broadcast frame or if the destination address cannot be located in the address table, the router broadcasts the frame to every terminal of the LAN via an intercom channel. Col. 4, ll. 32-39.

If the source address cannot be located in the address table, the source is deemed a new source and the address table is refreshed to include the source address. Col. 4, ll. 39-45. According to *Huang*, in prior art implementations data from a source address that cannot be located in the address table is broadcast by the port controller so that all port controllers can receive the new address, but broadcasting the data (as opposed to simply the source address) unnecessarily reduces network speed. Col. 4, ll. 45-63. *Huang's* solution is to assemble a new address learning frame (NALF), with only the new source address, to the other port controllers in order to refresh their address tables. Col. 4, l. 63 – col. 5, l. 18. For unicast data frames, the data is transmitted only to a specific port of a specific controller based on the destination address.

Col. 5, ll. 18-22. As a result, the conventional address table refreshing operation of broadcasting the whole data packet (destination address, source address and data) via the intercom channel to the address table of every port controller in the LAN can be avoided. Col 5, ll. 22-30. Each port controller 21 has a single address table (212 and 312) for both source and destination addresses. Col. 1, l. 62 – col. 2, l. 59; Col. 4, l. 1 – col. 5, l. 33; Figure 3 & 5.

The Office Action asserts that *Dai* fails to disclose automatically registering a list of addresses associated with outgoing packets, but that automatic registration is well-known in the art, as evidenced by *Huang*, and would have been an obvious modification to *Dai* in order to increase network speed. However, Applicants respectfully submit that automatically registering a new communication device with a cable modem is not well-know in the art and that the combination of *Huang* with *Dai* asserted in the Office Action is improper. As indicated above, *Huang* teaches updating the address table of every port controller in a network when a new source address in a data packet is encountered. *Huang's* invention is to send a new address learning frame with only the source address, rather than sending the entire packet as *Huang* suggests is taught in the prior art. In contrast, as also described above, *Dai* uses a source address table to distinguish between (i) packets that should be processed by an incoming packet controller for a working port segment because they are directed to an address within the controller's working port segment, and (ii) packets that should be dropped because they are directed to an address that is not within the controller's working port segment.

However, if *Dai* is modified by *Huang* to automatically update the source address table for each incoming packet controller when a new source address is encountered, then *Dai* will be unable to distinguish between addresses directed to an address within the controller's working port segment and packets that are not. As a result, contrary to the asserted motivation to combine in the Office Action, the modified *Dai* will be unable to drop unnecessary signal traffic within a controller's working port segment, which will reduce rather than increase performance. *Dai*, col. 4, ll. 29-34. The same can be said for outgoing packets. Col. 4, ll. 35-59. Accordingly, *Dai* teaches away from *Huang*, making the combination of *Dai* and *Huang* improper. *See* MPEP § 2145(X)(D)(2) (references cannot be combined where reference teaches away from their combination). Applicants respectfully submit, therefore, that any rejection based on the combination of *Dai* and *Huang* should be withdrawn.

Beighe discloses a cable modem interface unit 90 layer that is coupled to a network driver interface layer 70 and to cable modem 16. Col. 4, ll. 30-34; Figure 3. The interface unit includes a control packet filter 50, a protocol handler 55, and a receive unit 57. *Id.* Each received packet is passed to control packet filter 50 which determines if the packet is a control packet or a data packet. Col. 4, ll. 41-43. The control packet filter passes data packets to the receive unit 57, which in turn passes the data packet to the network driver interface layer 70, at which time network driver interface layer 70 generates an acknowledgement signal. Col. 4, ll. 43-45 & 48-51. The control packet filter passes control packets to the protocol handler 55 for processing. Col. 4, ll. 45-47 & col. 4, l. 66 – col 5, l. 1. Accordingly, filtering in *Beighe* relates to distinguishing between data packets and control packets, as opposed to dropping packets having a destination address that is not within a particular network segment.

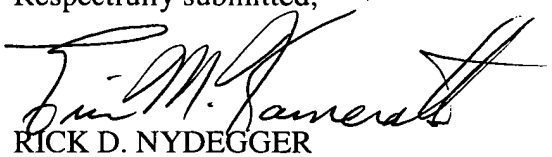
The Office Action asserts that *Dai* and *Huang* do not show a cable modem receiving incoming and outgoing packets, but that this feature is well-known in the art as evidenced by *Beighe*, and would have been an obvious modification of *Dai* and *Huang*. In order to establish a prima facie case of obviousness under 35 U.S.C. § 103(a) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one or ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP § 2143.01.

As motivation, the Office Action suggests that the desirability and advantages of modifying *Dai* and *Huang* with *Beighe* are to decrease the cost of using a cable network for Internet access. (Note that *Beighe* focuses on reusing existing hardware and software (e.g., that found on a typical home computer) for processing packets received over a coaxial cable. Col. 1, ll. 56-61.) However, this motivation merely reflects the motivation for practicing *Beighe* in the first instance—not why it would be desirable to modify *Dai* and *Huang* based on *Beighe*—and thus is insufficient as a motivation to combine these three references. *Dai* and *Huang* do not even mention a cable modem. Accordingly, Applicants respectfully submit that the Office Action fails to show a teaching or suggestion with respect to the desirability of the combination of *Dai*, *Huang*, and *Beighe*. Therefore, any rejection based on the combination of *Dai*, *Huang*, and *Beighe* is improper and should be withdrawn.

For at least the foregoing reasons, *Dai*, *Huang*, and *Beighe* do not anticipate or make obvious Applicants' invention, as claimed for example, in independent claims 1 and 21. Applicants note that the rejections of record for the dependent claims are now moot. Accordingly, all claims are in condition for prompt allowance. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 19th day of January, 2004.

Respectfully submitted,



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